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AMSAT NEWS SERVICE
ANS-260

ANS is a free, weekly, news and information service of AMSAT North America, The Radio Amateur Satellite Corporation. ANS reports on the activities of a worldwide group of Amateur Radio operators who share an active interest in designing, building, launching and communicating through analog and digital Amateur Radio satellites.

Please send any amateur satellite news or reports to:
ans-editor@amsat.org

In this edition:
* Cubesats Deployed From Vandenberg Atlas V Launch
* 2012 AMSAT Space Symposium & Annual General Meeting Comes to Orlando
* 2012 Symposium Banquet Speaker - Astronaut Dr. Samuel T. Durrance
* 2012 AMSAT Symposium Schedule
* AMSAT-NA Board of Directions Election Results
* DynaCube CubeSat Under Development in South Africa
* Japan's PROITERES Launched - Signals Received
* AMSAT Store Grand Reopening
* Five CubeSats to be Deployed From ISS on September 27
* Satellite Shorts From All Over
* ARISS Status - 10 September 2012

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ANS-260 AMSAT News Service Weekly Bulletins

AMSAT News Service Bulletin 260.01
  From AMSAT HQ SILVER SPRING, MD.
September 16, 2012
To All RADIO AMATEURS
BID: $ANS-260.01

Cubesats Deployed From Vandenberg Atlas V Launch

The Atlas V NROL-36 launch from Vandenberg Air Force Base in California, originally planned for August, successfully launched on 13 September at 2139 UTC.

This launch carried a satellite for the National Reconnaissance Office. Also aboard this flight at four cubesats as part of ELaNa IV mission and seven cubesats for government missions.

Several hours after launch Justin Foley, KI6EPH, announced via the #Cubesat IRC Channel that all eight P-PODS had successfully deployed.

The ELaNa Cubesats aboard are:
+ CINEMA (Cubesat for Ion, Neutral, Electron, Magnetic fields)
   o Downlinks for engineering telemetry and command are in the 2400-2450 MHz range; Science telemetry is in 2200-2300 MHz range.

+ CSSWE (Colorado Student Space Weather Experiment)
   o Downlink 437.345 MHz, 9k6 with AX25

+ CP5 (PolySat)
   o Downlink 437.405 MHz at 1 watt, AFSK on LSB AX.25 over NRZI at
     1200 baud, every 2 minutes, begins 3.5 hours after first turn-on.

+ CXBN (Cosmic X-Ray Background Nanosatellite)
   o Downlink 437.525 MHz, GFSK, AX.25

The US Government Satellites aboard are:
+ Aeneas
   o First cubesat to deploy 2.4 GHz Dish Antenna. WIFI transmitter
     will transmit on 2425.0 MHz with 1 watt of output power.
   o Downlink 437.600 MHz AX25 1200 bps beacon every 10 seconds and
     spread spectrum two-way link elsewhere in the 70cm band.
+ ORSES (ORS Enabler Satellite)
+ Horus
+ Re
+ Aerocube 4A, 4B, 4C
   o Testing deployable solar panels.
   o Technology demonstration of "parachute-like" devices to deorbit
     satellites.
   o Testing closed-loop attitude control system based around a
     three-axis gyroscope.

Please refer to the prior bulletin for mission summaries and satel-
lite team web pages: http://amsat.org/pipermail/ans/2012/000637.html

A detailed article of the launch can be found on-line at:
http://www.americaspace.org/?p=23568

[ANS thanks NASA, the CubeSat Teams noted above, AMSAT-UK, Gunter's
  Space Page and nasaspaceflightnow.com for the above information]

2012 AMSAT Space Symposium & Annual General Meeting Comes to Orlando

AMSAT announces the 2012 AMSAT Space Symposium will be held on
Friday, October 26th through Sunday, October 28th. The Symposium
weekend will feature:

+ Space Symposium with Amateur Satellite Presentations
+ Operating Techniques, News, & Plans from the Amateur Satellite World
+ Board of Directors Meeting open to AMSAT members
+ Meet Board Members and Officers
+ Annual General Membership Meeting
+ Annual Banquet-Keynote Speaker and Door Prizes

See the AMSAT Web Store to complete your on-line registration:
http://store.amsat.org/catalog/index.php?cPath=27

Downloadable paper registration forms in MS-Word format and
PDF format are available on the 2012 Symposium page:
http://www.amsat.org/amsat-new/symposium/2012/index.php

Prices for the Symposium are:
+ Symposium Registration including Proceedings
   o Through September 23, 2012: $ 45.00
   o Starting September 24, 2012: $ 50.00
   o At the Door: $ 55.00

+ Saturday Evening Banquet $ 45.00

+ Sunday Morning Area Coordinators' Breakfast $ 15.00

+ Monday (Oct 29) bus trip to KSC and entrance ticket $ 100.00

The Symposium Hotel is the Holiday Inn at Orlando-International Airport is located one mile from the Orlando International Airport (MCO). The AMSAT discount rate is $99 + taxes per night. The reservation block code used when calling the hotel directly is AMT.

The hotel telephone number is 407-851-6400. The Symposium Committee recommends you make reservations by calling the hotel directly rather than through the Web. Cutoff date for reservations is Oct 6, 2012. The direct link to the hotel web page is: http://www.holidayinn.com/hotels/us/en/orlando/mcoap/hoteldetail

The hotel offers free Internet connection and free airport shuttle. When you arrive at the Orlando Airport call 407-709-5310 to request the shuttle.

The Orlando International Airport (MCO) is the closest to the Symposium and is served by most major air carriers. The hotel address is: 5750 T.G. Lee Blvd - Orlando, FL 32822. A map link is included on the hotel web page.

[ANS thanks the 2012 Symposium Committee for the above information]

2012 Symposium Banquet Speaker - Astronaut Dr. Samuel T. Durrance

The featured speaker for the AMSAT 2012 Saturday Evening Banquet on October 27 will be Dr. Samuel T. Durrance, NASA Astronaut/Payload Specialist and Professor of Physics and Space Sciences at the Florida Institute of Technology.

Biography

Samuel T. Durrance was born in Tallahassee, Florida, but considers Tampa, Florida his hometown.

He received a Bachelor of Science degree and a Master of Science degree in physics (with honors), at California State University, Los Angeles, 1972 and 1974, respectively, and a doctorate in astro-geophysics at the University of Colorado at Boulder in 1980.

Dr. Durrance has been involved in space exploration, scientific research and education for over 30 years. He has logged over 615 hours in space as a payload specialist and member of the crew of Space Shuttle Columbia for the STS-35/Astro-1 and Space Shuttle Endeavour for the STS-67/Astro-2 missions.

He played several key roles in the design, construction, integration, and operation of the Hopkins Ultraviolet Telescope and NASA's Astro Observatory. He conducted research and directed graduate students at the Johns Hopkins University for 16 years.

He has designed and built spectrometers, detectors, and imaging systems, and made numerous spacecraft and ground-based astronomical observations. He conceived and directed a program to develop adaptive-optics instrumentation for ground based astronomy.

He led the team that designed and built the Adaptive Optics Corona-

graph, which led to the discovery of the first cool brown dwarf, Gliese 229 b, orbiting a nearby star. He also co-discovered a tell-tale signature of planet formation in the dust disk surrounding the star beta Pictoris.

Starting in 2001, Durrance was the executive director of the Florida Space Research Institute (FSRI) created by the State of Florida in 2000. FSRI was located at NASA's Kennedy Space Center in support of the State's Space Life Sciences Laboratory. Durrance guided FSRI from its start up phase to a successful research and education organization.

Since 2006, he has been a professor of physics and space sciences at the Florida Institute of Technology. At Florida Tech he is developing an interdisciplinary research program and undergraduate degree program in astrobiology. His long-term goal at Florida Tech is to create a climate where students and faculty can regularly participate in space-based research programs. His research interests include the origin and evolution of the solar system, the search for planets around other stars, planetary astronomy, atmospheric physics, nuclear physics, adaptive optics, spacecraft operations, and the origin of life.

He has published over 70 technical papers on planetary astronomy, adaptive optics, atmospheric physics, nuclear physics, and spacecraft operations.

[ANS thanks the 2012 Symposium Committee for the above information]

2012 AMSAT Symposium Schedule

To help you plan your trip to Orlando the 2012 Symposium Committee has posted a high-level schedule of the weekend's events.

Preliminary 2012 Symposium Schedule

Thursday 25 October 2012

AMSAT Board of Directors Meeting 8am - 9pm

Friday 26 October 2012

AMSAT Board of Directors Meeting 8am - Noon
Trips to SkyCraft 9am - Noon
AMSAT Symposium 1pm - 5pm

Saturday 27 October 2012

Symposium 8am - 3pm
AMSAT General Meeting 3:30pm
AMSAT Banquet 6:30pm - 10pm

Sunday 28 October 2012

7:30am AMSAT Area Coordinator's Breakfast
Local trip of Interest TBD

Monday 29 October 2012

Special trip to Kennedy Space Center 8am-6pm

The trip will include a round trip bus from the hotel and entrance to the Space Center. The cost will be about $100. This is a wonderful experience for those that haven't been and for those that have been multiple times. We need to get an idea of how many will participate to select the correct bus. Contact Martha if interested

Watch the AMSAT Symposium Web Pages for the latest information:
http://www.amsat.org/amsat-new/symposium/2012/index.php

[ANS thanks the 2012 Symposium Committee for the above information]

AMSAT-NA Board of Directions Election Results

As a result of the 2012 board of directors election, Tom Clark, K3IO, Lou McFadin, W5DID, and Gould Smith, WA4SXM, will serve on the board for two years. The first alternate is Mark Hammond, N8MH and the second alternate is Patrick Stoddard, WD9EWK. The final results of the voting with 700 ballots cast are as follows;

Tom Clark, K3IO 514
Lou McFadin, W5DID 449
Gould Smith, WA4SXM 393
Mark Hammond, N9MH 309
Patrick Stoddard, WD9EWK . 213
Steve Coy, K8UD 162

[ANS thanks Alan, WA4SCA, and Martha for the above information]

DynaCube CubeSat Under Development in South Africa

A news item on the South African Radio League reports on their September 9 amateur radio newscast that 20 interns at the Denel Dynamics Engineering Academy of Learning are designing and building the DynaCube CubeSat as part of their internship training. The interns are students who have completed their engineering degree, masters or PhD.

During the first year they spend half their time in the Academy and the other half in their designated departments. "The programme is aimed at exposing interns to a complete product development cycle", said Grant Wilson who leads the Academy. "Designing and building a CubeSat and developing a ground station to manage the satellite is an ideal project to achieve this."

The 20 strong Intern Project Team was split into three separate teams, each responsible for certain aspects of the project. Team Ground Zero is responsible for the ground station and radio frequency (RF) link components. Team Virtuoso is responsible for the cube structure and on-board computer; and Team Frodo is responsible for the payload, Attitude Control and Determination System (ADCS), and the launch.

More information about DynaCube on the SA AMSAT web at:
http://www.amasatsa.org.za

[ANS thanks SARL and SA AMSAT for the above information]

Japan's PROITERES Launched - Signals Received

The PROITERES satellite, built by a team of students and faculty members of Osaka Institute of Technology (OIT) was successfully launched aboard India's PSLV C21 rocket on September 9.

The purpose of the mission is to demonstrate powered flight using a Pulsed Plasma Thruster (PPT) engine. Its amateur radio callsign is JL3YZK.

PROITERES stands for PRoject of OIT Electric-Rocket-Engine Onboard Small Space Ship and will transmit on 437.485 MHz FM/AFSK. The spacecraft carries a camera and the two CPU's run the Linux operating system. Amateur radio operators around the world reported copying the downlink signal shortly after launch.

[ANS thanks Mineo Wakita, JE9PEL for the above information]

AMSAT Store Grand Reopening

The AMSAT Store is fully open for business after being updated. All the usual AMSAT software, hardware, and clothing are available, as is the registration for the AMSAT 2012 Symposium and activities: http://store.amsat.org/catalog/index.php?cPath=27

Please stop by, even if you are just looking: http://store.amsat.org/catalog/

You can also find a link to the AMSAT Store from the main web page at: http://www.amsat.org. It is the bottom button on the list on the left side of the main page.

If you don't find what you are looking for here, contact Martha at the main office:

+ E-mail at martha at amsat.org
+ From the US call toll free at (888) 322-6728
+ From all other locations call (301) 589-6062
+ Fax (301) 608-3410
+ Regular mail: AMSAT, 850 Sligo Ave. Suite 600, Silver Spring, MD 20910

[ANS thanks Alan Biddle, WA4SCA for tha above information]

Five CubeSats to be Deployed From ISS on September 27

Five cubesats launched on July 21 and now aboard the ISS have been integrated with the J-SSOD small satellite deployer on the the Japanese Experiment Module, also known as Kibo. They will be deployed with the Kibo robotic arm planned September 27, 2012. Deployment of these satellites was delayed last week due to crew EVA activities.

The five CubeSats on this mission include:

+ Raiko
   http://www.astro.mech.tohoku.ac.jp/RAIKO/ (Japanese)
   2U cubesat, photography, Ku-band beacon

+ We Wish
   http://www.meisei.co.jp/news/2011/0617_622.html
   Infrared camera for environmental studies

+ FITSat 1
   http://www.fit.ac.jp/~tanaka/fitsat.shtml
   High-speed data test, high power LED visual tracking
   CW Beacon 437.250 MHz,
   FM Data   437.445 MHz,
   High speed data 5840.00 MHz.

+ F-1 Vietnam Student CubeSat
   On-board camera for earth observation mission
   VX-3R1, 437.485 MHz FM downlink:
   o Solar cell power only, operates in sunlight only
   o Output power: max 0.3W, half-wave dipole antenna
   o Morse code beacon (10 chars) using PWM CW every 30 seconds

   VX-3R2, 145.980 MHz FM downlink:
   o Rechargeable battery, operates in dark and sunlight
   o Output power: max 1.0W, half-wave dipole antenna
   o AFSK 1200bps, half duplex, one AX.25 packet every 30 seconds

+ TechEdSat
   http://ncasst.org/techedsat.html
   http://www.uk.amsat.org/5018
   Downlink on 437.465 MHz

[ANS thanks the CubeSat teams, and Mineo Wakita JE9PEL for the
  above information]

Satellite Shorts From All Over

+ California amateurs may be interested in observing the flyover on
   the morning of September 20, 2012, of space shuttle Endeavour. It
   is scheduled to perform a low-level flyover of northern California,
   passing near NASA's Ames Research Center and various landmarks in
   multiple cities, including San Francisco and Sacramento en route
   to its permanent home at the California Science Center in Los An-
   geles. Endeavour is mounted atop NASA's modified 747 Shuttle Car-
   rier Aircraft (SCA). Additional details are posted at:
   http://spaceref.com/news/viewpr.html?pid=38476

+ Keith Cowing from SpaceRef.com interviewed Flight Engineer Astro-
   naut Suni Williams on the International Space Station:
   http://www.youtube.com/watch?feature=player_embedded&v=T_D_o9UxpTE

+ Science minded hams might want to investigate CosmoQuest, home to
   several citizen science projects. You will find the opportunity to
   join Vesta Mappers - Explore the surface of Vesta, one of the larg-
   est asteroids in our Solar System. Or join Moon Mappers - to ident-
   ify craters and other interesting phenomena in actual images of the
   moon. The Ice Investigators project will have you looking for aster-
   oids and transient space objects to help to direct the New Horizons
   spacecraft. Visit http://cosmoquest.org/ for more information.

+ This article discusses how CubeSats have captured the attention of space agencies and universities world-wide due to the significant amount of science that can now be packed aboard. Read up at: http://thespacereview.com/article/2155/1

+ The next Hudson Valley Satcom net date is Thursday, September 27, 8 PM EDT (UTC-4 UTC) on the 146.97 MHz MBARC Repeater (PL 100). An echolink connection is available on the N2EYH-L node. More information at: http://www.hvsatcom.org. (Stu, WA2BSS)

[ANS thanks everyone for the above information]

ARISS Status - 10 September 2012

1. German Students Delighted with ARISS Contact

An Amateur Radio on the International Space Station (ARISS) contact was held between on-orbit astronaut Sunita Williams, KD5PLB and students at the Gymnasium Michelstadt in Michelstadt, Germany on Friday, September 7. Williams was able to answer 14 questions posed by the students during the ISS pass. Over 1600 students, teachers, and VIP's were in attendance, as well as representatives from radio, television and newspapers. Positive feedback was received from the school, including the following: "Older colleagues compared the feeling to watching the moon landing in TV. Our Kids were electrified and already now we can see an increased interest in sciences and extracurricular activities. We are planning to continue this topic and have further projects in this field." Video has been posted.
See: http://www.youtube.com/watch?v=4xmL6wSPWzE

2. Girls' School Speaks with ISS Astronaut

On Sunday, September 9, Tara Anglican School in North Parramatta, New South Wales, Australia spoke with Astronaut Sunita Williams, KD5PLB via an Amateur Radio on the International Space Station (ARISS) contact. The radio connection was provided by telebridge station ON4ISS in Belgium. The contact was integrated into the school's science and space curriculum. Tara Anglican, a girls K-12 school, was selected by Oxford University as the Australian school to participate in the Global Jet Watch Program which links astronomers at Oxford University with students from four high schools around the world in Australia, Chile, South Africa and India in order to carry out cutting edge research. Oxford University installed a research grade 20 inch RC Optical telescope, together with custom designed instrumentation and an observatory with a 4.5 metre dome on Tara's grounds for use by the students. The school also formed a partnership with the Astronomical Society of New South Wales (ASNSW) through which students are mentored in complex astronomy projects by experienced amateur astronomers.

[ANS thanks Carol, KB3LKI, for the above information]

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In addition to regular membership, AMSAT offers membership in the President's Club. Members of the President's Club, as sustaining donors to AMSAT Project Funds, will be eligible to receive addi-

tional benefits. Application forms are available from the AMSAT Office.

Primary and secondary school students are eligible for membership at one-half the standard yearly rate. Post-secondary school students enrolled in at least half time status shall be eligible for the student rate for a maximum of 6 post-secondary years in this status. Contact Martha at the AMSAT Office for additional student membership information.

73,
This week's ANS Editor,
Lee McLamb, KU4OS